

In the specification:

Please amend the title on page 2, line 2 as follows:

**~~SOLID-STATE POLYMERIC SENSORS, TRANSDUCERS AND ACTUATORS~~**  
**A METHOD OF FABRICATING A DRY ELECTRO-ACTIVE POLYMERIC SYNTHETIC**  
**MUSCLE**

Please amend the abstract on page 27, beginning on line 1 as follows:

**~~SOLID-STATE POLYMERIC SENSORS, TRANSDUCERS, AND ACTUATORS~~**  
**A METHOD OF FABRICATING A DRY ELECTRO-ACTIVE POLYMERIC SYNTHETIC**  
**MUSCLE**

ABSTRACT OF THE INVENTION

New polymeric materials and their fabrication methods that are electrically active in terms of sensing and actuation are invented. These materials are comprised of solid-state ion-conducting materials such as polyethylene oxide (PEO) and its derivatives or imbedded in a family of mixed polymer systems such as polydivinylbenzene (DVB) and polystyrene polymers. Such materials suitably electroded with conductive materials such as gold, platinum and silver exhibit large deformation (both two and three dimensionally) under low electric fields of 10's V/mm. Conversely, if these materials are deformed, they produce 10's of mV/mm electric fields that can be used as means of sensing or electromechanical powering devices for batteries. The method of fabricating the new polymeric materials comprises the steps of providing a polyelectrolyte material, mixing the polyelectrolyte material with a conductive material and affixing at least two electrodes to the mixed polyelectrolyte material and conductive material.